

# PATENT COOPERATION TREATY RECEIVED

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INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

MAY 01 2006

To:  
MICHAEL J. MALLIE  
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
12400 WILSHIRE BOULEVARD  
7TH FLOOR  
LOS ANGELES, CA 90025

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP  
LOS ANGELES, CA 90025

**PCT**

INTERNATIONAL BUREAU OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

NO DOCKETING REQUIRED  
N.A.

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

**27 APR 2006**

Applicant's or agent's file reference

2986.P029

**IMPORTANT NOTIFICATION**

International application No.

PCT/US02/24267

International filing date (day/month/year)

29 July 2002 (29.07 2002)

Priority date (day/month/year)

25 April 2002 (25.04.2002)

Applicant

SYNPLICITY

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/ US

Mail Stop PCT, Attn: IPEA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
Facsimile No. (571) 273-3201

Authorized officer

David Nelms

Telephone No. 571-272-1797

Form PCT/IPEA/416 (January 2004)

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2986 P029	<b>FOR FURTHER ACTION</b>		See Form PCT/IPEA/416																								
International application No. PCT/US02/24267	International filing date (day/month/year) 29 July 2002 (29.07.2002)	Priority date (day/month/year) 25 April 2002 (25.04.2002)																									
International Patent Classification (IPC) or national classification and IPC IPC: <b>H01L 27/10</b> ( 2006.01) USPC: 257/207,208,211																											
Applicant SYNPLICITY																											
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>				<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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Date of submission of the demand 03 November 2003 (03.11.2003)		Date of completion of this report 11 April 2006 (11.04.2006)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer <u>Rhonda Field</u>  David Nelms  Telephone No. 571-272-1797																									

Form PCT/IPEA/409 (cover sheet)(April 2005)

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US02/24267

## Box No. I Basis of the report

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☒ the description:  
pages 1-17 as originally filed/furnished  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the claims:  
pages 18-23 as originally filed/furnished  
pages\* NONE as amended (together with any statement) under Article 19  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☒ the drawings:  
pages 1/10-10/10 as originally filed/furnished  
pages\* NONE received by this Authority on \_\_\_\_\_  
pages\* NONE received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages none
- ☒ the claims, Nos none
- ☒ the drawings, sheets/figs none
- ☒ the sequence listing (*specify*): none
- ☒ any table(s) related to the sequence listing (*specify*): none

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US02/24267**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims <u>2-6,9-15,17-19 and 20</u>	YES
	Claims <u>1,7,8,16 and 18</u>	NO
Inventive Step (IS)	Claims <u>2-3,5,9,10,12 and 17</u>	YES
	Claims <u>1,4,6-8,11,13-16 and 18-20</u>	NO
Industrial Applicability (IA)	Claims <u>1-20</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and Explanations (Rule 70.7)**

Claims 1, 7-8, 16 and 18 lack novelty under PCT Article 33(2) as being anticipated by Krumm et al. (US 4,353,040).

Krumm et al. discloses an integrated circuit device (Figures 1A-1B) comprising:

- a) a plurality of signal lines S disposed within a substrate;
- b) a power grid disposed on said substrate and comprising: a plurality of power lines V having a first thickness; and a plurality of ground lines G having said first thickness, said power grid for supplying power and ground to circuitry of said substrate; and
- c) a shield mesh disposed on said substrate and comprising of a plurality of power lines V (first lines in claim 18) having a second thickness; and a plurality of ground lines G (second lines in claim 18) having said second thickness, wherein respective signal lines of said plurality of signal lines are disposed between a respective power line of said shield mesh and a respective ground line of said shield mesh, said shield mesh for reducing the effects of electronic cross-talk between nearby signal lines of said plurality of signal lines.

With respect to claims 7 and 16, said electronic cross-talk comprises capacitive and inductive coupling.

Claims 4, 6, 11, 13-15, 19 and 20 lack an inventive step under PCT Article 33(3) as being obvious over Krumm et al. (US 4,353,040).

Krumm et al. further discloses said power and ground lines of said shield mesh are alternatively disposed and parallel to each other within conductor planes (1-7) of said substrate. Krumm et al. does not specifically disclose the conductor planes formed of metal. However, metal such as copper, aluminum are conventional materials known in the art to form conductors for low resistivity. Therefore, it would have been obvious to one of ordinary skill in the art to form conductors of metal to increase conductivity of the conductors.

With respect to claim 6, 13 and 20. Krumm et al. discloses the circuit, wherein said power and ground lines of said shield mesh are alternatively disposed in a first direction parallel to each other within a first metal layer of said substrate and wherein said power and ground lines of said shield mesh are also alternatively disposed in a second direction parallel to each other within a second metal layer of said substrate, said second metal layer being underneath said first metal layer and wherein said first and second directions are 90 degrees apart.

With respect to claim 14, third lines of said first metal layer and third lines of said second metal layer are coupled together using first connections (Figure 3).

With respect to claim 15, fourth lines of said first metal layer and fourth lines of said second metal layer are coupled together using second connections (Figure 3).